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It is necessary to "cultivate problem-solving attitudes and skills as well as relevant direct learnings" in order to maximize transfer of learning. Therefore, the persistent life situations curriculum is best equipped to promote transfer of learning. This view suggests two major guidelines for teacher education programs: (1) Problem-solving effectiveness can be developed through good teaching in college classes and professional laboratory situations. (2) Transferable elements should be emphasized which would, in turn, require a curriculum design specially oriented to persistent life situations. Moreover, it is important to realize (1) that a cognitive-oriented approach to a philosophy of education is too restrictive, (2) that analysis of teaching techniques is too limited an approach to enable comprehensive assessment of the quality of instruction, and (3) that direct as well as indirect experiences should be provided in the teacher education curriculum. Nevertheless, despite its merits, the persistent life situations curriculum has not been widely adopted in either public or higher education. (Included are three pages of examples of student experiences that incorporate conditions favorable for transfer in preservice teacher education programs plus a 12-item bibliography.) (SG)

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THE PERSISTENT LIFE SITUATIONS CURRICULUM AND THE TRANSFER PROCESS IN TEACHER EDUCATION

Sydney C. Davis

Presented at a Conference Honoring

Florence B. Stratemeyer

French Lick, Indiana, June 10-12, 1965

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THE PERSISTENT LIFE SITUATIONS CURRICULUM AND THE TRANSFER PROCESS IN TEACHER EDUCATION *

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> It would seem to be desirable....to teach by using the situations learners actually are facing in their out-of-school lives whenever this is practicable. 1/

The use of situations faced by learners in their lives outside of school is the basis for the key contention of this paper--that the persistent life situations curriculum is preeminently equipped to help youngsters to secure transfer of learning benefits.

The Transfer Process

If we can read Italian better from having studied Spanish, we have an instance of transfer. And the same thing goes if we can type better from practicing on the piano or can enjoy Mozart's music more from listening to Beethoven. In all these instances we say that transfer of learning has occurred because learning in one realm has increased our competence in another.

We speak, in contrast, of "direct learning" if we can read Italian better from having studied Italian or can type faster from practicing on the typewriter or can appreciate Mozart more from listening to his music. In all these cases the common element is increased competence to cope with the kinds of situations originally encountered.

Transfer of learning, we see, refers to improving one's ability in the absence of direct practice. Thus the Dictionary of Education describes transfer of training as "the improvement, facilitation, or modification of a certain learning without direct training, through learning or practice in a related activity;..." 2/ And Cronbach takes a similar stand when he refers to transfer of learning as "improved ability to deal with a situation not encountered during training." 3/

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*Paper prepared for the Conference Honoring Florence B. Stratemeyer, French Lick, Indiana, June 10-12, 1965.

1/ Stratemeyer, Forkner, McKim and Passow. Developing A Curriculum for Modern Living. Second edition. New York: Bureau of Publications, Teachers College, Columbia University, 1957. pp. 74-75.

2/ Carter Good. Dictionary of Education. New York: McGraw-Hill Book Co., Inc., 1945.

3/ Lee Cronbach. Educational Psychology. Second edition. New York: Harcourt, Brace & World, Inc., 1962. p. 56.

We change each moment that we live. Hence, no one remains precisely the same between the learning situation and those later situations in which he applies his learning. Put differently, each situation of which we are a part has unique elements; none 100 per cent resemblance to any other situation. For even when later surroundings exactly duplicate those of an earlier situation, the human element has changed.

When Cronbach speaks of transfer as "improved ability to deal with a situation not encountered during training", 4/ he gives "situation" its most common meaning--as referring to the learner's surroundings but not to the learner as well. Thus transfer is said to be demonstrated the first time that a mechanic repairs a new make of car or when a tennis champion, on being introduced to ping pong, masters strategy faster than the average man. Transfer is claimed because of improved ability to cope with an environment ("situation") "not encountered during training."

Environmental conditions, of course, are changing too. Hence it often becomes impossible to offer youngsters practice in environments identical in all respects to those with which they will later become involved. Each term paper is somewhat unique. So, too, is each student committee, oral report, library assignment, and experiment. Even shooting foul shots during basketball practice is not precisely the same as during the game.

Environmental uniqueness is most apparent when making wise choices is being learned. For the making of deliberate, rather than automatic or impulsive, responses most often is an outgrowth of situations in which there was uncertainty about the best way to proceed. And these situations of uncertainty, in their turn, are most frequently produced when the learner feels obliged to deal with unfamiliar elements. Youngsters who are learning to make wise choices, in short, are rarely given direct practice of the 100 per cent sort. Hence then can seldom apply their learnings to later situations in an unthinking, automatic way. Instead, to the extent that their surroundings have new elements, they have to work out solutions as their situations unfold. For what they have previously learned seldom enables them to cope with later situations in a habitual way. They must do problem-solving as well.

Direct learning, we see, can greatly assist but never fully prepare a youngster for the future. For as later situations evolve, the youngster will need to streamline his solutions to the unique set of conditions with which he then is faced. Put differently, the youngster will have to employ problem-solving techniques in addition to what he has previously learned.

We have seen that direct learning requires similarity between practice situations and the later situations in which the learning may be displayed, while transfer of learning requires dissimilarity between such situations. But we have also noted that every situation involving a learner is unique, that 100 per cent resemblance between practice and later application situations can never occur. Even when the ever-changing learner is ignored, it is clearly evident that environments seldom repeat themselves in every detail, especially where learning to make wise choices is involved. In this all-important educational sphere dissimilarity between practice and application environments usually is the rule.

4/ Ibid.

Suppose we observe someone study Italian during a three-year period. How should we classify this learning? Should we call it "direct learning"? Or "transfer of learning"? Or a blend of both these kinds of learning? Or should we give this learning some other name?

If this person now handles Italian better, we call it a case of "direct learning". But suppose he knew no foreign words three years ago and has not studied another foreign language. If he now can also puzzle out the headlines of a Portuguese newspaper, we call his ability to handle this unfamiliar situation an instance of "transfer" as well. For this three-year study of Italian has outcomes which qualify it for both the "direct learning" and the "transfer of learning" categories.

But why stop here? What about French and Spanish? Experts say that Italian resembles these two languages more closely than it resembles Portuguese. Hence isn't it reasonable to suppose this student of Italian has developed increased aptitude to deal with these two languages too? And of course the same thing may hold true for Russian, Chinese, Esperanto, and Bantu. Perhaps our student of Italian has unknowingly mastered elements of all these languages despite the fact no clearcut evidence has accrued. Unless we are prepared to promulgate that learning cannot take place unless some respected member of the human race has trustworthy evidence for that event, we must admit our student also may have simultaneously learned some Spanish, French and, perhaps, Bantu. In fact, for all we shall ever know, he may even have simultaneously learned some elements of languages spoken on planets in some galaxy other than our own.

No act of learning carries an identifying tag. Hence, at the time a particular act occurs we have no way of knowing whether it should be called an instance of direct learning or one of transfer. Only later, after we have noted signs of learning in situations that were similar or dissimilar to the original practice situation, can we say that direct learning or transfer or learning has occurred. In short, we should recognize that terms such as "direct learning" and "transfer of learning" are man-made distinctions, not intrinsic qualities of this or that specific act of learning.

There is only one requirements for a particular learning process to qualify as an instance of transfer: That process must bring about "improved ability to deal with a situation not encountered during training." [5/] Since there only has to be improved ability to deal with <u>one</u> such situation in the entire universe, transfer of learning--often unrecognized, of course--is always likely.

All of us have abilities we never demonstrate. We can eat five eggs at a single sitting. Or climb Pikes Peak if we set our minds to it. Or read the dictionary from cover to cover. The fact we never do these things in no way signifies we are unable.

The same when it comes to learning. Both direct learning and transfer of learning can happen though we never collect the slightest evidence. Take direct learning. As we read a novel, we learn the plot even though we may

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5/ <u>Ibid</u>.

never tell another soul the story. And the same thing can be said for transfer of learning. We may learn elements of other languages without ever demonstrating, or even knowing, that we have gained such competence. Thus, if the man who studied Italian has simultaneously mastered elements of Spanish, transfer of learning also has been helped. The fact our student neither reads nor recognizes his ability to read Spanish is irrelevent. For the issue is: "Has transfer of learning--'improved ability to deal with a situation not encountered during training'[6]--been promoted?", not "Has it been demonstrated?"

When surgeons operate, they find brain tissue, never experiences, ideas, facts or pieces of information. There is no empirical evidence, in short, to show that, literally speaking, learning is the collecting of such items or their images in the brain. We should conclude, therefore, that from an observer's frame of reference such items are only "stored inside" a person's head in the way that music and words are "stored inside" a computer, tape, or victrola record. Modification of strucutre--not insertion and storage of experiences, ideas, music or words--is what literally happens. And it is these structural changes as incorporated into the make-up of the learner, computer, tape, and victrola record, that cause all four to behave somewhat differently when they next are in the same surroundings.

When laymen speak of "transfer" they most frequently mean "to convey from one person, place, or situation to another." [7] But as we know, "transfer of learning" means something very different. For what is learned cannot be used or moved about unchanged in the layman's sense of the term. Hence we should recognize the transfer process for what it actually is: modification of the learner's make-up, with no experience or idea being literally conveyed and applied intact to different kinds of settings. And for this reason, valid theories of transfer must not imply that an experience, idea, fact, or piece of information learned in one situation can be literally carried over intact--"transferred" in the layman's sense of this word--to later and different kinds of situations.

Many people think of "experience," "idea," "fact," and "piece of information" in introspective terms, as words which refer to certain kinds of happenings occurring before the experiencing person's "mind." Loosely speaking, a person's "mind" is thought of as an eye focused permanently on an ever-changing TV screen on which that man's perceptions, dreams, ideas, ambiguous surroundings, toothaches, and the like pass by. "Experiences" are viewed, in brief, in dynamic personal terms, as ever-changing aspects of a complex <u>process</u>--as private experien<u>cing</u>.

Furthermore, in line with evidence amassed by physiologists in their studies of the brain, experiential phenomena are conceived as the <u>result</u> of brain activity rather than brain activity itself. Thus brain activity behind a person's eyes is thought to be the immediate <u>cause</u> of the solid objects seen, or experienced, before his eyes. And a somewhat similar causal role is

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6/ <u>Ibid.</u>

7/ Webster, 7th edition, <u>New College Dictionary</u>.

assigned to a person's brain in its relationships to the ideas, facts, and pieces of information appearing on and disappearing from that person's private "TV screen." In short, because all experiential phenomena are viewed as processes, each human experience must be conceived as occurring during a particular span of time, one having a starting point and an end.

To say that each of our experiences must have a starting point and an end is to admit that none has permanence. Even "an experience that is constantly repeated"--say, watching the sun set every evening--lacks permanence. Instead, each repetition is a new experience. For the first observation ends when the sun disappears from sight and our attention shifts to other matters. Hence we do not literally relive or bring back our first experience when we observe the sun repeat its actions on the following day.

We must remember that experiencing is a process and that when a process stops it stops existing. Hence when we watch the sun set on the second evening, we can only rightly claim that we are having a duplicate experience twenty-four hours later. It is like turning on the oven flame, then turning it off, and then turning it on again. The last flame is a new interactive process involving different particles of gas and oxygen. It is not the first flame reincarnated. In short, if a person's brain is the immediate cause of what that man experiences, his experiences must flash on and off his "TV screen" as the momentary condition of his brain dictates--in the way the refrigerator light flashes on or off each time we open or shut the door.

Experiences, we see, are not material or immaterial things which can be filed away unchanged. So, literally speaking, they cannot be recalled, reorganized, or reconstructed, directly absorbed, acquired or inserted into our brain or handed over intact to another person. Nor does empirical study of other people's brains or critical introspection warrant acceptance of the popular notion that some or all of our experiences, feelings, and ideas shift back and forth intact between a conscious realm and one of less or no awareness.

The previous analysis has implications for overt behavior, too. For if every process has a beginning point and an end, a reaction or response learned in one situation cannot be shifted unchanged--"transferred" in the layman's sense--to a later situation. We must conclude, in short, that theories of transfer should not imply that processes such as a man's ideas, experiences, feelings, or physical actions can literally be preserved intact until they are applied in a somewhat different setting.

Suppose a child learns the sound of "t" while reading a story that uses "toy," "tug," and "tree." And suppose that two weeks later he recalls the t-sound when he encounters "tag." Since the original and later application situations are identical in so far as the learned element is concerned, this later recognition of the t-sound exemplifies direct learning, not transfer.

Suppose we now remind the child that he also knows the ag-sound in "bag," "rag," and "flag." At this point the youngster has developed the two phonetic insights needed to sound out "tag." But suppose he still maintains he cannot pronounce this word. We would feel disappointment, of course, and yet we would hope our ag-hint had changed his brain, enabling him to quickly discover how to fuse the "t" and the "ag" sounds.

Assuming that the youngster finally works out the correct pronunciation, how much of his success should we assign to direct learning? And how much credit should we give to his problem-solving efforts which followed our hint? The facts seem clear enough: Direct learning of the "t" and the "ag" sounds preceded our hint, and additional learning from his problem-solving efforts followed that event. Or we can describe this sequence in the following terms: The direct learning done by the child before our hint enabled him to bring a more responsive, more efficient, more intelligent brain to the "tag" environment; after our hint, additional learning accrued as the child engaged in problem-solving activities related to ascertaining the correct pronunciation of this word.

The previous illustration is a good example of what most psychologists and educators have in mind when they refer to the transfer process. They properly point out that the "tag" situation never had been encountered in its entirety before, that it differed in some respects from both the "toy"-"tug"-"tree" and the "bag"-"rag"-"flag" situations. Hence they claim that by the time the youngster had worked out the correct pronunciation of this word he had developed "improved ability to deal with a situation not encountered during training."[8/] Put succinctly, these thinkers would equate the transfer process with any developmental sequence which begins with direct learning and concludes with further learning that accrues from problem-solving activities made more efficient because of that previous learning.

Other psychologists and educators would exclude all direct learning from their definitions. They prefer to equate the transfer process with just the problem-solving part of the developmental sequence described above--with the activities and learning that occur while a person is applying his direct learnings in an unfamiliar situation. But irrespective of one's preference for this or that definition, responsible educators promote all aspects of the transfer process because all aspects enhance transfer ability.

Teaching for Transfer

We have seen that direct learning mades a man more knowledgeable and skillful and thus enables him to deal more adequately with situations not encountered previously. This leads us to the following somewhat paradoxical conclusion: If we would teach for maximum transfer, we should devote much effort to promoting direct learning.

But direct learning is only one contributor to successful transfer. The learning that accrues from problem-solving, in its overt trial-and-error form as well as in a man's imagination, is equally important. And since effective problem-solving depends in part on inclination as well as on aptitude to use direct learnings to cope with unfamiliar situations, both should be promoted. To sum things up, if we would maximize transfer, we must cultivate problem-solving attitudes and skills as well as relevent direct learnings.

As already indicated, "transfer of learning" is a man-made label used to designate a particular kind of process involving learning and develop-

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8/ Cronbach, loc. cit.

ment. Hence we should apply all that we know about fostering the learning and development process. We should maximize student satisfaction, understanding and involvement. We should streamline subject matter, materials, equipment, and activities to fit each student's interests and abilities. We should guide relationships so that the student experiences ones sufficiently enhancing to permit him to concentrate on learning. We should arrange educational conditions so that the student is constantly kept aware of the results of his own performance. We should cultivate a student self-portrait likely to evoke more energetic effort. We should encourage the student to see resemblances between the learning and the later situations in which that learning have application. And we should infuse the student's environment with all the other attributes which research suggests will augment and reimforce desired learning and development.

When we turn to the problem-solving half of the transfer process, again we should apply the findings of formal and informal research. And since both interest and skill in problem-solving contribute to a person's ability to cope with novel situations, we should cultivate growth in both these areas. Specifically, we should encourage the development of desire and competence as these relate to identifying the nature of one's problems, to observing thoughtfully, to collecting and weighing useful information, and to judging possible solutions in imagination and in terms of actual consequences. All conditions likely to develop problem-solving proficiencies, in short, should be promoted.

People engage in problem-solving only when they experience this activity as rewarding or worthwhile. Hence we should make sure the student derives much satisfaction from activities of this kind. Only if this happens will the student develop the kind of problem-solving inclinations, or set, which will make him want to search for and apply transferable features in future unfamiliar situations.

When we shift from promoting interest in problem-solving to promoting problem-solving skills, we should again fall back on current knowledge, this time as it pertains to the cultivation of any skill. Thus, we should help the student see how he stands to gain from becoming a more skillful problem-solver. While giving much encouragement, we should let him decide the degree of problem-solving skill he wishes. In addition, we should provide him with diversified practice opportunities to help him learn effective ways to carry out the problem-solving process in a variety of contexts. And we must help him to understand the principles which underlie successful problem-solving techniques at every "stage" of the process so that he can judge and direct his transfer of learning efforts more intelligently. Whenever possible in consequence, long- and short-term problems of felt concern to youngsters should be made an integral part of the curriculum.

We have seen that every instance of transfer is influenced by all the basic conditions affecting other forms of learning. One feature of the transfer process, however, deserves additional scrutiny. This feature, often labeled the "transferable element," refers to any constituent experienced by the learner in both the original learning situation and the later application setting.

Transferable elements, as we know, are first encountered in their original learning situations. Hence they are partly or fully learned before the student reaches the application situation. This means the student has actually had some direct training in the mastery of these elements despite the fact this learning has occurred in a different kind of setting. Thus, an Italian normally gets more meaning from a page of Latin than an American when neither has had previous contact with the language. Why? Because the Italian has already mastered more transferable elements. And for this reason, he is required to do less problem-solving to get the general meaning. Prior learning of transferable elements, in short, has increased his competence to deal with a situation not encountered earlier.

The lesson is clear: We should stress transferable elements when teaching for transfer. For every time a student masters a transferable element, he increases his ability to handle later related situations.

We would be wise, therefore, to plan the curriculum in terms of the life situations youngsters are apt to face. Specifically, we should duplicate likely later elements, highlight resemblances, and maximize similarities. We should use a direct rather than an oblique approach, encouraging youngsters to directly practice what we would have them learn. For when youngsters are familiar with a transferable element, they have less need to do intensive problem-solving when that element is later experienced in a new context.

We should give particular attention to the causal potential of transferable elements. For knowledge of this facet of these elements is the key to bringing about desired consequences. This instrumental role of knowledge of causal conditions has been well expressed by Dewey when he wrote:

> In order to control the course of events it is indispensable to know their conditions.[9]

And again:

> .....(we live) in a world where nothing is attained in any other way than by attention to its causal conditions.[10]

We have seen that transferable elements are partly or fully learned before the youngster meets them again in application situations. Hence the more of these elements, the more the youngster knows and can foresee about such situations. And for this reason, the greater is his control.

An experienced dance instructress, for example, has learned hundreds of cues while following the leads of students. Because of direct training, she already knows many of the cues that will be used by new dance partners. That is why these cues--transferable elements, when they recur--enable her to readily follow each new student. And if all the moves of some new partner were found to be familiar, she would follow that person's every lead without the slightest difficulty. She would do no problem-solving in that situation

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9/ John Dewey, Experience and Nature. p. 110.

10/ Ibid., p. 399.

because she would feel no need to adjust her footwork. In brief, the profusion of transferable elements would give her all the control she needed.

As we have noted, transferable elements increase a person's competence to cope with a new situation. So if we would promote "improved ability to deal with a situation not encountered during training,"[11] we should maximize and highlight these elements. In fact, for optimal competence we should have youngsters practice in situations identical to those we would have them master.

In actual practice, of course, we often have to settle for dissimilar situations. Yet we should strive to make the practice situations as similar as possible to those future situations in which the learning seems likely to be used. Budding pianists should practice on the piano, not on the harp. And those who would learn English grammar most efficiently should concentrate on the English, not the Latin, language.

To summarize. If we would teach for transfer, future use should govern the scope and organization of the curriculum. We should maximize the number of resembling components experienced by a person in both the original learning context and the application ones. For the more transferable elements, the more insight into the later related situations will the person have. Put paradoxically, the more familiar will these unfamiliar situations be. And for this reason, that person will be better equipped to do whatever problem-solving learning is needed to complete the transfer process he is undergoing at the time.

Finally, we should remember that interest and skill in problem-solving also make vital contributions. And for this reason we should clearly realize that teaching for transfer requires that we shape the learner's make-up--his problem-solving attitudes and competence--as well as his environment.

Teacher Education and Transfer

The previous analysis suggests two major guidelines when planning teacher education programs. Such programs should foster problem-solving desire and aptitude and maximize transferable elements.

Students in preservice teacher education programs usually want to become good teachers. Few relish the thought of personal mediocrity, of becoming "living death" in the classroom. Hence when their professional guidance has been adequate, they normally show a reasonable degree of interest and skill in problem-solving by the time they graduate. In short, their problem-solving effectiveness can be amply developed if there is good teaching in college classes and in professional laboratory situations.

The second guideline, maximizing and highlighting transferable elements, makes greater demands on teacher education programs. For besides good teaching this guideline requires a special type of curriculum, one saturated with transferable elements. Examples of the kinds of situations

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11/ Cronbach. loc. cit.

which need to be incorporated into this type of curriculum are listed in the righthand column of the chart below. The resemblance of this set of professional proposals to the persistent life situations curriculum design, to be described in the following section, also should be noted.

Some Examples of Student Experiences That Incorporate Conditions Favorable for Transfer in Preservice Teacher Education Programs

Kind of Professional Situation	Persistent Professional Situations	Student Experiences Having High Transfer Potential
1. Studying Youngsters	Obtaining needed information about the youngsters--their interests, abilities, potentialities, points of view, and the like	Using books, discussions, and firsthand experiences to study youngsters Writing anecdotal records Studying and practicing reflecting techniques Carrying out a longitudinal study of one youngster Studying individual youngsters and/or a small group of youngsters during participation or student teaching experiences
2. Planning for Youngsters	Making long- and short-term plans for guiding educational activities	Writing and analyzing long- and short-term plans that synchronize teaching practices with educational aims Writing a teaching unit Writing a plan for a one-session activity
3. Cooperating with Youngsters	Choosing, planning, implementing and evaluating cooperatively with the youngsters one is teaching	Choosing, planning, implementing and evaluating cooperatively with youngsters during professional laboratory experiences. Also, cooperative experiences with one's professors and cooperating teachers
4. Studying Environmental Conditions	Identifying, analyzing, labeling and classifying environmental conditions affecting learning and development; such conditions to include materials and physical facilities, human variables, symbolic and nonsymbolic components of the teaching process, and the like	Identifying, analyzing, labeling and classifying environmental conditions affecting learning and development; such conditions to include materials and physical facilities, human variables, symbolic and nonsymbolic components of the teaching process, and the like Using various classification systems while making class-

(continued on next page)

Kinds of Professional Situation	Persistent Professional Situations	Student Experiences Having High Transfer Potential
4. Continued		room observations; also, making unstructured observations College class discussions pertaining to ways of identifying, analyzing, labeling and classifying components of the symbolic and nonsymbolic educational environment
5. Studying and Analyzing Instructional Methods	Analyzing instructional methods derived from reading, discussions and personal experimentation Doing action-research in one's classroom	Analyzing instructional methods derived from reading, discussions and personal experimentation Studying and evaluating recommended methods of instruction during student teaching
6. Justifying Ideas and Actions	Using logic and evidence in support of one's ideas and actions When planning educational activities for youngsters During evaluatory discussions with youngsters and colleagues During parent-teacher conferences	Using logic and evidence in support of one's ideas and actions When planning educational activities for youngsters during student teaching During evaluatory discussions with youngsters and with classmates During evaluatory discussions of one's activities while a student teacher
7. Implementing Educational Decisions	Selecting and arranging human, symbolic and physical conditions likely to evoke desired learning and development Providing for individual differences	Selecting and arranging human, symbolic and physical conditions likely to evoke desired learning and development During student teaching; followed by evaluatory discussions
8. Democratizing Relationships	Guiding interpersonal activities in accordance with democratic principles	Guiding educational activities in accordance with democratic principles during student teaching. Also, experiencing democratic relationships in college classes, conferences, student committee activities, and professional laboratory situations. Evaluating all relationships in terms of the degree to which they incorporate and might better incorporate democratic principles

Kind of Professional Situation	Persistent Professional Situations	Student Experiences Having High Transfer Potential
9. Improving Group Dynamics	Improving group dynamics While working with the youngsters in one's class As a member of a teachers' committee In faculty meetings In parent-teacher conferences	Improving group dynamics College class dynamics studied by means of role-playing, direct observation and follow-up evaluations As a member of a student committee
10. Working with Consultants	Conferring and cooperative planning with consultants With music and art consultants With physical education teachers With the school nurse	Conferring and cooperative planning with consultants During student teaching; followed by evaluatory discussions with one's college supervisor and/or cooperating teacher and/or the consultant involved
11. Cooperating with Parents	Conferring with parents individually and in groups Parent-teacher conferences Participating in PTA meetings and PTA-sponsored activities	Sitting in on selected parent-teacher conferences and attending parent-teacher association meetings during student teaching; followed by evaluatory discussions with one's cooperating teacher and in college seminars
12. Improving the Curriculum	Working alone and in cooperation with others to improve the educational program in one's school and classroom Doing action-research in one's classroom Participating as a member of a teachers' committee to improve some aspect of the school program	Working alone and in cooperation with other students and one's teachers to propose better educational programs for youngsters, one's fellow students and oneself College class evaluations Cooperative evaluation with youngsters while doing student teaching
13. Participating in Professional Meetings	Participating in local, state, and national professional meetings	Participating in both student and teacher professional meetings, followed by evaluatory discussions in college classes
14. Evaluating One's Own Professional Effectiveness	Evaluating one's educational effectiveness: a. In terms of learning and developmental consequences By referral to objective evidence and by use of descriptive and evaluatory remarks b. Alone and in conjunction with status people, such as the school principal	Observing and judging one's educational effectiveness in college classes, in committees, and in professional laboratory situations and during related follow-up class and conference evaluatory discussions with one's professors and cooperating teachers During participation experiences During student teaching experiences While making a longitudinal study of one child

Saturation of the preservice curriculum with transferable elements lies at the heart of the above proposals. Maximizing transfer dividends is the sole objective. Hence this curriculum design should be regarded as only one of many elements to be incorporated into preservice programs.

Today we are bombarded by suggestions for improving teacher education. At the moment those who want prospective teachers to concentrate on cognitive learning have the spotlight. It therefore would seem wise to compare their recommendations with those outlined above.

The two orientations agree on several matters. Both see the teacher as a major influence on the quality of education received by youngsters. Both think the teacher can control and guide the youngster's learning better if he understands the teaching process. Hence both believe a sound curriculum should help the prospective teacher to develop competence in identifying, analyzing, labeling, classifying, and employing symbolic variables involved in teaching. And finally, both would like preservice programs to graduate prospective teachers possessing the knowledge, skill, and dedication needed to bring their professional objectives to fruition.

When we turn to differences, we find disagreements in at least three areas: disagreements over goals, disagreements over information obtainable from analytic techniques, and disagreements over what constitutes a fruitful conception of subject matter. A comparison of these two orientations is made more difficult by the fact that those who favor a "cognitive approach" to teacher education do not agree among themselves. Thus an advocate may approve of any one of the following ideas and yet disown the others.

Adherents of the "cognitive approach" to teacher education seem most united in their belief that concepts and critical thinking should be the major goals of professional programs. Even when they concede the importance of "the other objectives of education,"[12/] they fail to adequately explain how their curriculums will develop these objectives. Thus they are vague about how their curriculums will bring about desirable aesthetic, social, emotional, physical and motor aspects of learning and development. And they likewise seem obscure about the specific ways their programs will promote democratic skills, attitudes, values, and ideals. When not in outright disagreement, they seem oblivious to Dewey's admonition:

> ...that unless democratic habits of thought and action are part of the fiber of a people, political democracy is insecure. It can not stand in isolation. It must be buttressed by the presence of democratic methods in all social relationships. The relations that exist in educational institutions are second only in importance in this respect to those which exist in industry and business, perhaps not even to them.[13/]

12/ See statement by Bruner in Footnote #44.

13/ John Dewey, "Democracy and Educational Administration," School and Society, April 3, 1937. p. 462.

Cognitive goals, in short, are far too limited for a free society. Yet those preoccupied with concepts and critical thinking are prone to sponsor curriculum designs with this deficiency. And for this reason their programs are not apt to satisfactorily prepare the prospective teacher for many of his duties. Specifically, such programs are not apt to offer the prospective teacher sufficient opportunity to experience democratic ways of working. Nor are they apt to adequately develop concepts, competencies, and the commitment required for the promotion of many other desirable kinds of learning. To sum things up, cognitive-oriented program are apt to be deficient in many of the transferable elements needed if the prospective teacher is to master democratic ways of fostering all-round learning and development.

Stratemeyer expresses reservation about the limited goals of this approach to teacher education when she says:

> To standards of verbal and abstract intelligence must be added standards in human relations, in setting goals that are both realistic and forward looking, in perception of self, in non-verbal skills, and in translating ideas and values into behavior.[14/]

Analytic techniques--systematic ways of gathering facts through the methods of science and linguistics--is the source of a second disagreement between some adherents of a "cognitive approach" to teacher education and the approach suggested earlier. To be explicit, while everyone agrees such methods give us facts about the nature of the teaching process (defined as "a system of actions intended to induce learning"[15/]), some advocates of the "cognitive approach" contend that these techniques can also furnish us with information about the effectiveness of this process. Thus one adherent of the "cognitive approach" maintains that "the techniques of interaction analysis will...provide a basis for self-evaluation when actually teaching."[16/]

Dewey has observed that:

> Teaching may be compared to selling commodities. No one can sell unless someone buys. ...There is the same exact equation between teaching and learning that there is between selling and buying.[17/]

14/ Florence B. Stratemeyer. Perspective on Action in Teacher Education. The Sixth Charles W. Hunt Lecture of the American Association of Colleges for Teacher Education. Washington, D.C.: The American Association of Colleges for Teacher Education, 1965. p. 15.

15/ American Association of Colleges for Teacher Education. A Proposal for the Revision of the Pre-Service Professional Component of a Program of Teacher Education. A report prepared by Herbert F. LaGrone, Director, Teacher Education and Media Project. Washington, D.C.: the Association, 1964. p. 16. LaGrone credits B. Othanel Smith with developing this definition.

16/ Ibid. p. 20.

17/ John Dewey. How We Think. Revised edition. Boston: D.C. Heath and Company, 1933. pp. 35-36.

If Dewey is correct, there can only be one satisfactory final test of the effectiveness of teaching: the degree to which that process evokes desired learning and development. Hence, "self-evaluation when actually teaching"[18] requires that we also gather facts about the effects our instructional efforts have on learning and development. And since the learner is unique, we should concentrate on guiding his learning and development, not on regulating our instructional efforts in complete oblivion to their outcomes.

To summarize. Because investigations of the nature and the effectiveness of the teaching act require different, but overlapping, sets of facts, analytic methods which focus solely on the teaching process do not supply us with all the facts required to assess the quality of instruction. And for this reason, we should reject the claims of those who argue such techniques can be confined to acts of teaching and yet shed light on the effectiveness of that process.

A third difference between some advocates of a "cognitive approach" to teacher education and the approach suggested in this paper centers about what constitutes the most fruitful conception of "subject matter." Thus some adherents of cognition believe that subject matter can most fruitfully be defined as "cognitive knowledge about a subject."[19] Such a notion restricts "subject matter" to vicarious or indirect experiences because it deliberately excludes all nonsymbolic variables affecting learning and development. In short, it treats this term as if it was an honorific rather than a descriptive label.

In contrast, the curriculum design suggested in this paper attempts to capitalize on every facet of the educational environment. It recognizes that direct experiences also are important, that things as well as areas of knowledge can influence learning and development. Consequently it maintains that a more fruitful conception would affirm that subject matter:

> ...consists of the facts observed, recalled, read, and talked about, and the ideas suggested, in course of a development of a situation having a purpose.[20]

And for this reason, this approach to curriculum construction recommends that educational situations be so organized that the prospective teacher profits from contact with things as well as symbols.

Teachers work in a wide variety of settings. Hence preservice programs must involve the student in a similar spectrum for maximum transfer benefits. But any program based upon a conception of subject matter restricted to organi-

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18/ American Association of Colleges for Teacher Education. loc. cit. (italics not in the original)

19/ Ibid., p. 35. The editor credits Kenneth B. Henderson with the wording of this concept.

20/ John Dewey. Democracy and Education. New York: The Macmillan Company, 1916. p. 212.

zed bodies of knowledge, beliefs, and values asks its students to focus solely on data collected and processed by other people. Consequently such a program incorporates fewer transferable elements than the program outlined earlier. And for this reason, we should recognize that a conception of subject matter confined to cognitive knowledge will normally be less fruitful than one which tries to encompass every facet of the professional environment.

The previous analysis has sought to make the following major points. First, maximizing transfer benefits should be one guiding principle of a sound preservice program. Second, this guideline requires saturating educational situations with transferable elements. Third, the goals of a cognitive-oriented philosophy of education are much too limited to meet the needs of a free society. Fourth, analytic techniques confined to acts of teaching cannot throw light upon the quality of instruction. And fifth, a sound approach to teacher education should include direct as well as indirect experiences.

The Persistent Life Situations Curriculum

Earlier we saw that when experiencing stops, it stops existing and that the same thing holds for other processes. Take learning, for example. Learning starts with a situation that includes a person relatively or completely uninformed or undeveloped in a given area. Then, as the situation evolves, the person's make-up alters in ways which make him better informed or developed in that realm. Finally that particular learning process stops because the person falls asleep or shifts his attention and activities to other matters. Consequently, if the person should do further learning in that area on the following day, the second learning situation would be a later space-time event and not the uninterrupted continuation of the first event. For despite the fact that the "same" person would be involved both days, each act of learning would be a discrete event. And for this reason, the expression "situation," at least when applied to organisms, may be defined as "the sum total of internal and external stimuli that act upon an organism within a given time interval."[21/]

When we turn to the expression "persistent life situation," we find that "situation" is being used in a different way. For each such situation turns out to be a family or cluster of discrete space-time events. And as a result, a persistent life situation is not a situation in the generally accepted sense.

Let us refresh our memory about the nature of such situations. The following passages may help:

> (Persistent life situations are) those situations that recur in the life of the individual in many different ways as he grows from infancy to maturity. ....(They) tend to persist throughout life, although the circumstances through which they are met vary with the individual's background and maturity.[22/]

21/ Webster, op. cit. (Italics not in the original.)

22/ Stratemeyer, loc. cit., p. 115. (Italics not in the original.)

> School and community experiences are related because the same persistent life situations are faced in the home, at school, in the neighborhood, at church, and everywhere the learner works and plays.[23]

> Persistent life situations are continuing threads through life, appearing again and again in the everyday concerns of the individual.[24]

When advocates of the persistent life situations curriculum speak of "the same persistent life situations," they are not insinuating that specific space-time events "recur" or "are continuing threads...appearing again and again" in the reincarnation sense. Instead, they mean that the learner--the only "continuing thread," it may be added--will become involved in many somewhat similar events as he goes through life. Thus, when they say a class "might spend several weeks on such persistent life situations as MAKING EXACT COMPUTATIONS and MANAGING MONEY,"[25] they mean the children will frequently become involved in both these kinds of situations. Each of these two persistent life situations, in short, refers to many resembling situations occurring at different times in the children's lives; neither refers to a single, short-lived event. In consequence, we may compare a persistent life situation to a chain of Howard Johnson restaurants or to a series of similar stations on a subway line. The analogy, of course, is not exact because the learner normally deals with just one instance of a particular persistent life situation at any given time.

The "persistent life situations curriculum" encompasses all the persistent life situations in which the learner has been, now is, or will become involved. This conception is made explicit in the statement that "persistent life situations, as learners face them, become the fabric from which the curriculum develops."[26] And since the curriculum is the means by which an educator evokes desired learning and development, advocates of the persistent life situations curriculum employ "persistent life situations as learners face them" to achieve this end.

We come at last to an assessment of the transfer potency of this curriculum. To be specific, to what degree does this curriculum produce "improved ability to deal with a situation not encountered during training?"[27]

Before continuing we might be wise to remind ourselves that the transfer process and transfer ability are not identical. Instead, the two are causally related, the transfer process being a necessary condition for an increase in transfer competence. In addition, it might be helpful to recall the

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23/ Ibid., p. 117. (Italics not in the original.)

24/ Ibid., p. 125. (Italics not in the original.)

25/ Ibid., p. 120.

26/ Ibid., p. 116. (Italics not in the original.)

27/ Cronbach, loc. cit.

conclusion that we reached about the transfer process, namely that it is "any developmental sequence which begins with direct learning and concludes with further learning that accrues from problem-solving activities made more efficient because of that previous learning."[28] In short, we should evaluate the transfer efficacy of the persistent life situations curriculum by two criteria: (1) ability to promote relevant background learnings, and (2) ability to evoke interest and skill in problem-solving activities.

Let us start our assessment with the second of these criteria, the promotion of interest and skill in problem-solving activities. In discussing their assumptions advocates of this way of organizing educational experiences contend:

> There is a conviction that in this changing world it is important to educate for change. ....There is also a belief that it is important to devote some of the learner's time to the techniques of problem-solving, through experiences in group and individual problem-solving and through opportunities to study how issues are resolved.[29]

They further say:

> ...for any one individual or for a particular group, the most effective basis for selecting what is to be taught is found in <u>the problems actually faced in daily living.</u> ....the starting point is the learner and his needs.[30]

The learner, in brief, is given many opportunities to practice problem-solving skills while resolving problems about which he feels concern. And because his problem-solving efforts usually help to satisfy his needs, his inclinations to do further problem-solving are continually being enhanced.

Problems begin as situations in which a person has a need or goal but feels uncertain how to proceed. Hence long-term problems, in particular, give purposeful direction to behavior because they induce the person to coordinate observing, planning, implementing, and evaluating in order to fulfill his need or goal. And for this reason, such problems give the learner practice in all facets of the problem-solving process--in choosing wisely, in observing thoughtfully, in collecting useful information, in weighing alternatives and forecasting likely outcomes, in persisting in the face of obstacles, and in evaluating experienced consequences. In short, because the persistent life situations curriculum is based on problems--"the problems actually faced in

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28/ From the summarization paragraphs of "The Transfer Process" section of this paper, page 6.

29/ Stratemeyer, <u>op. cit.</u>, p. 110.

30/ <u>Ibid.</u>, pp. 109-10. (Italics not in the original.)

daily living,"[31] this curriculum is an extremely effective instrument for developing learner competence to carry out the problem-solving half of the transfer process.

Yet the persistent life situations curriculum holds no monopoly when it comes to promoting interest and skill in problem-solving. For certain other project-type curriculums promote these kinds of development, too. So if transfer competence depended solely on problem-solving ability, the persistent life situations curriculum would rate highly but it would not reign supreme. The scales are tipped in favor of this way of organizing educational experiences by the second variable: the supremacy of this curriculum in cultivating the kinds of background learnings which increase "ability to deal with a situation not encountered during training."[32]

Let us remember that the persistent life situations curriculum is rooted in the day-to-day experiences of the learner, that:

> ...the choice and organization of learning experiences should grow out of situations of home, school, and community life as they are faced by the particular pupils.[33]

Hence it follows that:

> The basic problems and situations which are central in life are central in education.[34]

And:

> School and community experiences are related because the same persistent life situations are faced in the home, at school, in the neighborhood, at church, and everywhere the learner works and plays.[35]

Or to convert the above three statements into conventional transfer of learning concepts, the persistent life situations curriculum closely resembles the later "unfamiliar situations" in which the transfer process terminates. This built-in similarity maximizes:

> ...the number of resembling components experienced by a person in both the original learning context and the application ones. ....And for this reason, that

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31/ Ibid.

32/ Cronbach, loc. cit.

33/ Stratemeyer, op. cit., p. 110.

34/ Ibid., p. 116.

35/ Ibid., p. 117.

> person will be better equipped to do whatever problem-solving learning is needed to complete the transfer process he is undergoing at the time.[36]

Reinforcement and diversification of useful background learnings also are stressed by this curriculum. In the words of its chief advocates:

> Repeated contacts with varied aspects of a problem are important if learners are to adjust effectively to new situations.[37]

In addition, the learner is encouraged to focus on key ideas and to generalize. Thus the proponents of this way of organizing educational experiences declare:

> There is the conviction that concepts and generalizations are the crucial learnings if the goal is to develop the learner's ability to act effectively in his world.[38]

Hence:

> Conscious efforts are needed to help learners draw parallels between what they are doing in school and related out-of-school experiences. ....The learner operates more effectively in a new situation when he has reached generalizations about the old ones. ....Response is made to a new situation in terms of the general conclusions reached in an old one.[39]

In all these ways the persistent life situations curriculum highlights transferable elements and thus supplies the learner with background learnings which increase his competence to cope with situations not encountered earlier.

36/ From the summation paragraphs of the "Teaching for Transfer" section of this paper, p. 9.

37/ Stratemeyer, op. cit., p. 74.

38/ Ibid., p. 110. Incidentally, support for this stress on basic concepts and generalizations comes from an unexpected source. For Bruner, an advocate of subject-centered curricula, states: "The teaching and learning of structure /'how things are related' (p. 7)/ rather than simply the mastery of facts and techniques, is at the center of the classic problem of transfer." --Jerome S. Bruner. The Process of Education. Cambridge, Mass.: Harvard University Press, 1961. p. 12.

39/ Ibid., pp. 74-75.

Obstacles to Wide Adoption of This Curriculum

Despite the unquestionable merits of the theory underlying this way of organizing educational experiences, the persistent life situations curriculum has not been widely employed in the public schools or at higher educational levels. One commentator has explained this strange phenomenon in the following way:

> It seems fair to question whether such a design as the "persistent life situations" design has had any widespread acceptance in the ten years since the first edition was published. There is also considerable reason to ask if the inherent assumption of teacher competence necessary for implementation of the design is at all realistic.[40]

The previous statement grossly oversimplifies the reasons why this curriculum has not been systematically employed. For the hard fact is that many highly competent educators who subscribe wholeheartedly to the theoretical formulations of this way of organizing educational experiences also have failed to systematically employ this type of curriculum in their own classrooms or to encourage its adoption by their school systems.

Adverse conditions are easier to control and regulate when understood. Hence those who favor popular adoption of this curriculum should welcome the identification of current obstacles as an essential first step in their reduction or removal. It is in this constructive spirit that the following list of handicapping conditions is enumerated:

1. Teachers unqualified to implement this curriculum

The average teacher is unqualified to implement the persistent life situations curriculum because he lacks sufficient insight into:

a. The kinds of learning and development needed by citizens of a free society.
b. Human nature and its guidance.
c. The problem-solving process and its guidance.
d. The persistent life situation categories and their use as educational guidelines.

2. Teacher education programs not preparing students to implement this curriculum

Current teacher education programs seldom advocate or exemplify the persistent life situations curriculum.[41] Hence even interested college students are given little systematic guidance in ways to develop youngsters in accordance with this curriculum's basic purposes and principles.

40/ Donald R. Thomas, "Book Reviews," The Educational Forum. 22:476, May, 1958.

41/ See chart on pp. 10-12.

3. Unwieldy number of persistent life situation categories

Despite the explicit statement that "these charts represent one kind of analysis /and that faculty/ study groups may develop other categories or assign specific examples to different categories," [42] many subscribers of the theory underlying this curriculum find the approximate 150 pages devoted to the illustrative persistent life situations charts to be personally restrictive or overwhelming. As a result, they find "the persistent life situations system" to be impractical or unusable. Naturally, those less sympathetic to the underlying aims and theory of this curriculum react in a somewhat similar vein when they examine this design.

4. Resistance to the noncompetitive evaluation practices of this curriculum

Competitive grading requires measuring instruments to judge the relative achievements of competitors. But it is impossible to accurately assess a semester's growth in democratic understandings, attitudes, skills, or ideals. And the same thing holds for measuring a semester's growth in creativity, love for learning, concern for other people, ability to apply problem-solving techniques to daily living, and many other important kinds of learning and development. In short, because the persistent life situations curriculum would foster many kinds of learning and development which cannot be measured accurately, precise grading and evaluation in these areas would not be possible. Hence letter and percentage grades would become largely meaningless and, for this reason, so would developmental comparisons and the results of competition. Consequently, the vast majority of today's "grade happy" youngsters would complain that they did not know "how they were doing" and that they had lost their incentive "to work hard for an education." And many of their parents and teachers would agree with them. In addition, when it was recognized that a first-class education includes many other kinds of learning and development besides paper-and-pencil aptitudes, it would become more difficult for those who now walk off with "academic honors" to continue to monopolize the limelight. In a nutshell, the noncompetitive focus of this curriculum would evoke a good deal of anxiety and resistance from many of the youngsters, their parents, teachers, educational administrators, and the public.

5. Opposition to this curriculum from subject matter specialists

A subject matter approach to educating youngsters tends to fragment learning. In contrast, the persistent life situations approach encourages learners to study situations "as wholes," to integrate all that they know. In Stratemeyer's words:

> In the world of human affairs, problems and situations do not fall into discrete compartments labelled "political," "economic," "historical," "aesthetic," "technological." Human affairs call for decisions to be made and require that we draw upon all that we know.[43]

In short, the persistent life situations curriculum would tend to undermine the departmental approach to education and, for this reason, incur the vigorous opposition of many subject matter specialists.

42/ Stratemeyer, op. cit., p. 169.

43/ Stratemeyer, op. cit., p. 10.

6. Public indifference to many of the educational goals of this curriculum

The persistent life situations curriculum is based upon the assumption that American schools should try to develop each youngster's powers for intelligent self-direction used in accordance with democratic principles. Hence it aims to foster all-round learning and development, not to confine its major efforts to promoting knowledge and skills alone. And for this reason, this curriculum conflicts with the popular notion which tends to equate walking encyclopedias and highly trained scientist-technicians with well-educated people. In addition, there are many thinkers who flatly reject this popular notion and yet contend that intellectual development should be the only major aim of education. Thus one well known psychologist recently expressed the consensus of a highly respected group of academicians when he wrote:

> We may take as perhaps the most general objective of education that it cultivates excellence;...this phrase... refers...to helping each student achieve his optimum intellectual development.44/

We must conclude, in short, that even if the persistent life situations curriculum were to become more widely known, it would not be endorsed with wild enthusiasm.

Concluding Remarks

This paper tried to show why the persistent life situations curriculum surpasses other curriculums in transfer of learning dividends. It also listed several obstacles to explain the puzzling fact this way of organizing educational experiences has failed to enlist broad public and professional support.

Psychology tells us people are adjustive organisms constantly seeking to maintain and enhance themselves. Hence we should expect that people will resist the adoption of any educational program which they believe will seriously impede their values and convictions. Put differently, a society accepts or rejects all educational proposals in terms of promised social outcomes, not promises of efficiency. In consequence, it is naive to think that popular adoption of the persistent life situations curriculum might chiefly rest upon that curriculum's ability to insure transfer of learning benefits. It should be plain, instead, that this curriculum will only win wide popular endorsement when the community wants the kinds of citizens which such an educational program seems likely to bring forth. For only then will the community permit, encourage, and support the leadership of educators who would implement this way of organizing school experiences.

44/ Jerome S. Bruner. The Process of Education. Cambridge, Mass: Harvard University Press, 1961. p. 9. In fairness to this writer the reader should be told that in the sentence preceding the quoted passage Bruner made the following curious statement: "If the emphasis on what follows is principally on the intellectual side of education, it is not that the other objectives of education are less important."

Mankind has slowly evolved from the ape-man era to the caveman era to Ancient Egypt, Greece, and Rome to the Renaissance to 18th Century liberalism to the numerous political democracies of today. This long-term trend suggests a final victory for the democratic way of life, for ultimate application of democratic principles to economic, industrial, social, religious, and educational spheres as well as to those political. In such an ideal world, societies would deliberately mold their institutions so that the latter formed and reinforced intelligent, self-propelling, democratic tendencies.

Today, unfortunately, the average man shows little inclination to guide all facets of his personal and communal life by democratic principles. Instead, he usually finds manipulation and rationalization preferred adjustive patterns. Hence even should most elements of the persistent life situations curriculum gradually become incorporated into more widely employed curriculums, the uncompromising democratic spirit of this curriculum would prevent its strong endorsement by a world which still too frequently relies on force and semi-democratic arrangements to resolve its problems.

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